Multi-Function
Ethernet + Modem/Fax
PC Card User's Guide

ACCTON

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About this Manual

This is an installation guide for Accton's Ethernet+Modem/Fax PC Card. This manual covers the following topics:

*   Product description, summary of features and specifications
*   Description of important adapter parts, such as LAN connectors
*   Hardware installation procedure

Note: Procedures for software driver installation and additional information or changes that become available after the manual is printed are in text files on the driver diskette. Use the DOS *DIR* command to locate all available text files. View these file contents using the DOS *TYPE* command.

Package Contents

Carefully unpack the contents of the package and check them against the checklist below.

Ethernet+Modem/Fax PC Card

☑ One Multi-function Ethernet+Modem/Fax PC Card

EN2218-1 (with Modem speed @ 14.4 kbps)
EN2218-3 (with Modem speed @ 28.8 kbps)
EN2218-5 (with Modem speed @ 36.6 kbps)

☑ One PC Card Installation Manual
☑ One Y-cable with extenders
☑ One Driver Diskette
☑ One 4-in-1 Communication Utility Package

Please inform your dealer immediately should there be any incorrect, missing or damaged parts. If possible, retain the carton, including the original packing materials. Use them again to repack the product in case there is a need to return it for repair.

Back up your driver diskettes and use the copy as the working diskette. Do this to protect the original from accidental damage.

✎ Fill in the **Owner Registration Card** and mail it to Accton Technology Corporation.

Quick Installation Guide

1Step is designed to simplify the process of configuring the PC Card to run with NetWare or other network operating systems. To quickly install and configure your card, do the following:

1. Install the PC Card into a Type II PCMCIA slot.
2. Insert the driver diskette that comes with your package into the floppy drive.
3. Run `Install` to set up network drivers and configure your card.
4. Use the 1Step program to run diagnostics on the adapter card if required.
5. Refer to the Software Installation Advisory section in Chapter 2 if you encountered any problem during installation.

Tip: When the PC Card is inserted into the PCMCIA slot, it is automatically detected by the Card Services Super Client driver. The Super Client sets up the PC Card to enable Fax/Modem functions only. You still need Accton's Network Client drivers to activate the LAN function and provide simultaneous operations for LAN and Fax/Modem functions. If the Card and Socket Services Program is unavailable, Accton's Network Client drivers can be used to provide similar services.

Note: Simultaneous operations for LAN and Fax/Modem functions are not supported for Windows NT. (Refer to Chapter 2 for more details.)

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Chapter 1
Introduction

The Ethernet/Modem PC Card is a recent development in PCMCIA card technology. This card can manage the PC Ethernet interface and Data/Fax/Modem connections simultaneously. It can be installed and configured by running the Card and Socket Services Support (CS/SS) software provided with your computer, or by invoking the Client Driver Program provided with the PC Card. However, note that because of the lack of broadly accepted standards for CS/SS software, the Client Driver program generally provides a more dependable interface for specific PC Cards.

Accton's Ethernet+Modem/Fax PC Card can function as an Ethernet interface device, a 14,400/28,800/33,600 bits per second (bps) data modem, and a 14,400 bps Fax modem. The PC Card plugs into a Type II PC Card slot and connects to both the Ethernet and telephone network. Accton's Ethernet+Modem/Fax PC Card conforms to the latest Personal Computer Card International Association's PC Card Standard.

Features

- NE2000 compatible
- Conforms to IEEE802.3 industry standards and CCITT Telecommunication regulations
- Simultaneous LAN and Modem operation
- Support for half-duplex and full-duplex modem transmission mode
- 14.4/28.8/36.6 kbps Modem capabilities
- 14.4 kbps Fax capabilities
- Meets International Safety Standard regulations
- Supports major CS/SS (Card and Socket Services Software)
- Ethernet/Modem PC Card Client Drivers
- Supports popular industry-standard network operating systems
- Y-cable directly connects to wall LAN and telephone jacks
- Accton's proprietary, automatic, and easy-to-use adapter installation and configuration program
- Communication and Fax utility software that comes in versions for both Windows and DOS

Chapter 2
Installation

This chapter describes your PC Card and shows you how to install it. To install the Fax Utility, see instructions that come with the software.

Pre-Installation Considerations

When preparing to install your PC Card, make sure you have the required hardware and software in place. Installation procedures vary for different PCMCIA-compliant computers. During installation, the power to your PC may be ON or OFF.

Caution: The Y-cable is designed to work only with analog telephone systems. It cannot be used on digital phone lines. Both types use the same RJ-11 plug, but plugging a digital phone line into your PC Card will damage the adapter.

Installing the Hardware

PC Card Installation

1. Hold the card by its edges with the Accton logo facing up and the 68-pin PC Card connector towards the card slot.
2. Insert the card into the PCMCIA slot and gently push it in. Make sure that the connectors are properly aligned and firmly seated. (Do not force the card into the slot. You might damage the pins in the socket.)

Connecting the Adapter Cable to the PC Card

1. Plug the wide connector on the end of the Y-cable to the mating connector on the PC Card. Make sure the side of the Y-cable connector with the arrow heads faces upwards. The cable connectors and card should seat exactly and click into place. The Y-cable is shown in the following figure:
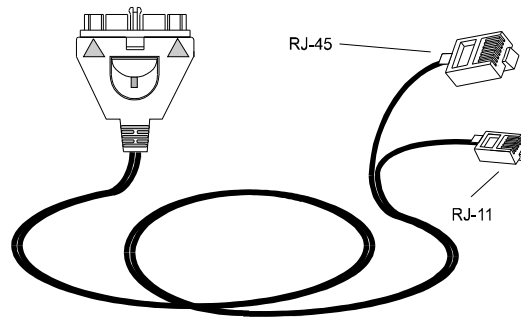
Figure 2.1   Y-Cable

The Y-cable serves both as a LAN and modem adapter cable. It uses a dual function twin cable. One is fitted with an RJ-11 plug and the other with an RJ-45 plug.

2. Plug the RJ-11 male connector into an analog telephone wall jack.

3. Plug the RJ-45 male connector into an RJ-45 network connection.

Installing the Software

Running Card Diagnostics

When hardware installation is complete, run diagnostics to check the card and the network cabling with the 1Step program. 1Step is in the root directory of the driver diskette that comes with the package. Run diagnostics by selecting the Test Adapter command from the Action Menu. For more information, see Chapter 3 on Using 1Step.

Card and Socket Services Support

Portable PCs with one or more PCMCIA slots normally have a PCMCIA socket controller chip built-in. The socket controller looks after requests from PCMCIA cards, and handles the interrupts and data transfer. Card and Socket Services drivers are normally shipped with these PCs to manage the socket controller.

Client Software Driver Installation

The driver diskette contains all the software driver programs supported by the adapter. Refer to the RELEASE.TXT file for a listing of these programs. In addition to the 1Step utility, special DOS commands, software drivers and README.TXT files, the driver diskette contains a RELEASE.TXT file. It is located in the root directory of the diskette, and provides information about the driver diskette's contents. Use the DOS *TYPE* command or Windows File Manager to check the contents of the file.

If your network operating system is NetWare or NDIS, use 1Step to install the corresponding driver. The driver installation programs for each operating system are contained in separate subdirectories. Refer to the.TXT file in each subdirectory for driver installation instructions.

From 1Step, press <F1> to get help for installing drivers for network operating systems other than NetWare and NDIS. Refer to Appendix A for a list of approved device drivers.

Software Installation Advisory

1. For those who intend to install Card and Socket Service Support drivers, reserve at least 64 KB of memory to provide enough resources for other PC Cards.

    Example: DEVICE=EMM386.EXE NOEMS X=D000-DFFF

2. *For those who installed Card and Socket Services Support device drivers in your config.sys,* use Super Client drivers to enable the PC Card's Fax/Modem function. When the PC Card is inserted into the slot, the Super Client will detect its presence and activate the PC Card's functions. Note that some Super Clients can be used to activate both the PC Card's modem and LAN functions, while others only activate the modem function. Accton's Client driver can activate both functions for this PC Card.

    Example 1: (DataBook CardTalk)
    DEVICE=SS_2.SYS (Socket Services driver)
    DEVICE=CARDTALK.SYS (Card Service driver)

    Example 2: (SystemSoft CardSoft)
    DEVICE=SSCIRRUS.EXE (Socket Services driver)
    DEVICE=CS.EXE (Card Services driver)
    DEVICE=CSALLOC.EXE

    Example 3: (Phoenix PCMPlus)
    DEVICE=PCMSSDB.EXE (Socket Service driver)
    DEVICE=PCMCS.EXE (Card Service driver)
    DEVICE=PCMCD.EXE (Super Client driver)

Activating the PC Card

The PC Card can be activated after installing and loading the Client driver, or by using the Card and Socket Services Support software normally referred to as a Super Client Driver.

Using Card and Socket Services Support

You can use third-party Card Services Super Client drivers to activate your PC Card. They are available from several vendors like SystemSoft, Phoenix, AMI, DataBook and Award, just to name a few. The Card Services software, once installed, stores information like memory blocks, I/O ports, or interrupt levels in the Card Information System (CIS) databank for card recognition. Information in the CIS can be extracted for use with resource allocation. Please refer to the specific Card Services installed in your computer for detailed information. CIS contents are organized as shown in the following example:

Item 1:	Accton
Item 2:	EN2218-PCMCIA-Ethernet
Item 3:	EN2218
Item 4:	R01

Note: When the PC Card is inserted into the PCMCIA slot, it is automatically detected by the Card Services Super Client driver.

Using Client Drivers

Accton's Client Drivers are located in the driver diskette. They can be used to directly activate the Card. Client drivers can still work even without Card and Socket Services Support software. The following sections describe installation procedures for the PC Card on some of the more popular operating system platforms running Novell NetWare.

Installing under DOS

1. Reserve at least 64 KB of memory by including the following in your CONFIG.SYS file:

   Device=EMM386.EXE NOEMS X=D000-DFFF

   We strongly advise that you reserve a portion of the memory during the bootup process to be used by the Client driver. The Client driver may still work without this, but if reserved memory is not available, you may not be able to start up the LAN and modem functions for the PC Card. Reboot your PC.

2. Invoke the 1Step installation program and choose `Install Software` from the `Action Menu` to copy the Client Drivers for Novell into your PC. (Refer to *Using 1Step* in Chapter 3 for more details.) The following files will be copied into the target directory specified by the user:

   LSL.COM
   PCMMLID.COM   (DOS ODI Client driver)
   IPXODI.COM
   NETX.EXE (VLM.EXE)
   CHGDRV.COM

   Check the following items to make sure everything is alright before you go to the next step:

   • If you're using the NetWare Shell (NETX.EXE) as opposed to the NetWare requester (VLM.EXE) to access NetWare resources, be sure that you have the "LASTDRIVE=" statement coded in your config.sys to reserve a drive letter for the NetWare Login directory when NetWare is started. For example, LASTDRIVE=Y will reserve the drive letter Z as the NetWare Login directory drive.

   If you are using the NetWare requester (VLM.EXE), Novell will set up the NetWare Login directory on the drive letter specified in the "First Network Drive=" statement in your NET.CFG file. You need not worry about the "LASTDRIVE=" statement. If you set the "LASTDRIVE=" to any letter other than Z, you may get warning messages. Ignore them.

   • Make sure you have allocated a portion of memory for the Client Driver (see step 1).

3. Reboot your PC. The system should display the following message:

   ```
   PCMCIA Adapter card is enabled!
   Modem is OK!
   ```

   Unless the following resources have been assigned to other devices, 1Step will normally configure the PC Card for the following IRQs, I/O base addresses, and ports:

Modem	IRQ = 4; I/O Base Address = 3E8; COM3
LAN	IRQ = 5; I/O Base Address = 300

4. Test the PC LAN card function by logging on to a server and mapping to a network drive.

5. Test the PC Card's Modem function by dialing out over the modem. (Refer to Chapter 4 for *Modem Setup*).

Installing under Windows for Workgroups (WFW 3.11)

1. Remove the existing PC Card and replace it with your EN2218 PC Card.
2. Reserve at least 64 KB of memory by including the following statement in your CONFIG.SYS file:

    ```
    Device=EMM386.EXE NOEMS X=D000-DFFF
    ```

3. Copy the file `ACC2218.EXE` from the `WFW311` subdirectory of the driver diskette into your Windows for Workgroups directory.

    ```
    A:\WFW311>copy ACC2218.EXE C:\Windows
    ```

4. Start up Windows for Workgroups.
5. If you are already using Microsoft Windows Network, go to your Windows Network Setup and disable it.
6. Reboot your PC.
7. Bring up the Network Setup dialog box, then click on the `Networks` command button.
8. Click on the `Install MicroSoft Windows Network` radio button, then click OK.
9. Select `Unlisted` or `Updated Network Adapter`, then press OK.
10. Insert the Client Driver diskette into your diskette drive and press <Enter> to read the OEMSETUP.INF file located in the root directory.

    ```
    A:\   <Enter>
    ```

11. Select the IRQ value and I/O Base Address, and press OK. (Note that the EN2218 PC Card can only be configured for IRQ 3 or 4.) These are the values assigned for the LAN function. Take note of them.

    When the Install Driver dialog box appears, enter the following:

    ```
    A:\   <Enter>
    ```

12. Insert the following command right after the EMM386.EXE statement in your CONFIG.SYS file, substituting the IRQ and Port values with those from the previous step:

    ```
    Device=C:\Windows\ACC2218.EXE /Int=<IRQ from step 11>
          /Port=<I/O Base Address from step 11>
    ```

13. Reboot your PC. During bootup, the LAN/modem I/O addresses, modem Port and IRQ will be displayed. These are the actual values assigned to the PC Card. If any of the values in your Windows setup need to be adjusted, use these values;

```
LAN:        IOBase=300
COM3:       I/OBase=3E8, IRQ=4
```

Note: If Windows fails to boot at this stage, this is because the IRQ assigned by the ACC2218.EXE is different from the IRQ set in step 11. Remove the PC Card from the card slot and reboot your PC. Start up Windows then go to `Network Setup`; select the Client Driver and set the IRQ to the value just displayed during bootup. Plug the PC Card into the card slot and reboot your PC again.

13. Test the LAN function by connecting to a network drive from the `File Manager`.

14. Test the Modem function by dialing out over the modem. (Refer to Chapter 4 on Modem/Fax Setup.)

To install NetWare Network support;

1. Bring up the Network Setup dialog box, then click on the `Networks` command button.

2. Click on the `Other:` radio button to display a menu list.

3. Select `Novell NetWare(Workstation Shell 4.0 and above)` from the list, then click `OK`.

4. Click on the `IPXODI.COM and LSL.COM (recommended)` radio button, then click `OK`.

5. Follow screen instructions to complete installation. (The last installation step requires you to restart the computer.)

6. Select `Disk` from the `File Manager`, then click on `Connect Network Drive...`

7. Click on the `NetWare...` radio button in the `Connect Network Drive` dialog box to display the NetWare Shell. (The NetWare shell offers a graphical interface for connecting to NetWare resources available in the Network. Attach to any necessary drives.

Installing under Windows 95

The installation process under Win95 is fairly simple. Follow the procedures listed below to complete installation.

1. If you already have a PC Card installed, you need to remove its components by doing the following, otherwise go to step 2.

   • Go to the `Control Panel` in `My Computer` and click on the `System` icon to display the `System Properties` folder.

   • From the `Device Manager` click on the `Modem` component, and then click on the `Remove` command button. Repeat the same procedure for `Multi-function` adapters and `Network adapters` components.

   • Click on `OK` to confirm changes.

   Warning: Do not remove the `PCMCIA socket` device under which you have the `PCIC*` or compatible `PCMCIA controller`. Doing so will disable the auto-detection feature for the PC Card.

   *Intel's 82365SL PCMCIA controller.

2. Plug your PC Card into the card slot and reboot your PC. The system will detect your PC Card and display an installation dialog box for "Accton - EN2218 - LAN/Modem."

3. Follow screen instructions to complete installation. At some point during the installation process you will be prompted to insert the Client driver diskette and type in the directory path where Client drivers for your OS platform are located. Type in the following:

   `A:\Win95`

4. After rebooting, open up the `Control Panel` folder again; click on the System icon and choose `Device Drivers`.

5. Click on the `System` icon and select `Device drivers` to view the installed components. The following drivers should appear under these components:

```
Modem
      Accton EN2218 Multi-function PC Card
Multi-function adapters
      Accton EN2218 Ethernet+Modem PC Card
Network adapters
      Accton EN2218 Multi-function PC Card (Ethernet)
```

6. Verify the LAN function by using `Network Neighborhood` to browse the network for any existing server.

   Note: NetWare Network support is loaded by default when the PC Card is installed.

7. Verify the Modem function by opening up the `Dial-Up Networking` folder and connecting to a modem site.

8. Use the Windows 95 Fax utility to verify the Fax function:

   • Go to `Fax` from the `Accessories` group under the `Programs` folder

   • Click on the `Compose New Fax` icon

   • Click on the `Dialing Properties` command button

   • Type the appropriate information into the text boxes where applicable.

   • Follow screen instructions to complete the Fax operation

Installing under Windows NT 3.5x

The current version of Client drivers only support the LAN function for Windows NT 3.50 and earlier. The LAN and Modem functions are both supported for Windows NT 3.51 and later. However, because the Windows NT 3.51 network interface is based on the miniport NDIS3 driver which can't be shared by different program tasks, only one function can be loaded at a time.

To install the LAN function of the PC Card:

1. Plug the PC Card in your card slot.

2. Go to the `Control Panel` and double-click on the `Network` icon.

3. Click on the `Add Adapter` command button.

4. Enter the directory path in the driver diskette where Client Drivers for the platform you are installing are located, e.g.,
   `A:\NT351`

5. Test the LAN function of the PC Card by logging on to a network.

Connecting to a NetWare network is easy under Windows NT. To install NetWare network support:

1. Go to the Control Panel and double-click on the Network icon.
2. Click on Add Software... to display the Network Software list.
3. Select Client Service for NetWare and click on Continue.
4. Follow the screen instructions to complete installation.

To initiate the Modem function of the PC Card:

1. Go to the Control Panel and double-click on the Network icon.
2. Disable the LAN function by removing the Client driver from the list of active drivers.
3. Test the Modem function by dialing into a site using the NT terminal emulator or any appropriate third party modem dialer.

Removing the PC Card

To remove the card, do the following:

1. Remove the media coupler from its connection to the PC Card.

   Squeeze the locking arms on either side of the wide connector, and pull to unplug the media coupler from the adapter.

2. Remove the coupler from the network cable's RJ-45 connector.
3. Remove the card from the slot and store it together with the coupler in a safe place.

Chapter 3
Using 1Step™

1Step is designed to simplify hardware diagnostics and software installation. Note that any changes made to the card's hardware configuration are only made available for diagnostic tests performed under 1Step. When 1Step is closed, the original hardware settings are automatically restored to the PC Card.

Getting Started

Install the 1Step Installation Program onto your hard disk drive. Insert the driver diskette that comes with the package into the host PC's floppy disk drive. At the DOS prompt, type the following and press <Enter>:

```
A:> install
```

A subdirectory named 1Step is automatically created for you. Follow screen instructions to complete the process. When installation is complete, 1Step is immediately executed.
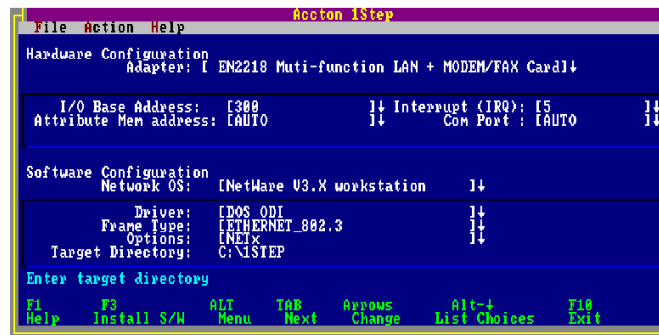
Figure 3.1 1Step Screen

Overview of 1Step

1. Type the following command at the DOS prompt, then press <Enter> to display the main screen for 1Step:

   1STEP <Enter>

2. Select the appropriate hardware settings for Card diagnostics.

   Select values for the I/O base address and interrupt.

3. Run diagnostics.

   Select `Test Adapter` from the `Action Menu` to run the diagnostics program.

4. Select the appropriate software configuration for the Card.

   Identify the Network OS, Driver, Frame Type, and memory management option in use; and then indicate the directory location of the drivers.

5. Install software.

   Run the `Install Software` command from the `Action Menu`. Executing this command automatically creates a software configuration file and a batch file. You may run this batch file under DOS to install the driver you've selected.

6. Return to DOS.

   Select `Exit` from the `File Menu` to leave 1Step and go back to DOS.

Setting the Hardware Configuration

Select the appropriate I/O base address and interrupt for diagnostics. You can point and click with the mouse or use the keyboard to make selections.

Selecting the I/O Base Address

The I/O base address is a channel through which information is transferred between the card and the host PC. It is important to note that each peripheral installed in the host PC should be assigned a unique I/O base address. Check the documentation that came with your computer to determine which addresses are already in use.

The PC Card allows I/O base address selections of 300, 320, 340 and 360. The factory default setting is 300h.

Selecting the Interrupt

The interrupt is an electronic signal from the card that goes to the host computer's CPU when a request is made. Each peripheral installed in the host PC is assigned a unique interrupt channel. (The word interrupt is used interchangeably with IRQ). A unique interrupt channel should be assigned for the Card. Check the documentation that came with your computer to determine which interrupts are already in use.

Make sure that a unique interrupt is assigned to the card. There are eight interrupt selections available, namely, 3, 4, 5, 2(9), 10, 11, 12 and 15. The adapter's default interrupt setting is 5.

Note: You can now perform the diagnostic tests described in the next section. However, remember that your hardware settings are only effective while running 1Step. The original settings will be automatically restored when you exit 1Step.

Running Diagnostics

Select the `Test Adapter` command from the `Action Menu` to run diagnostics. Running diagnostics on a single PC lets you monitor the adapter and the corresponding cabling system. However, this does not check the network's condition. For better results, have two or more PCs on the network run the test simultaneously.

The program runs several tests. The screen displays a `PASS` or `FAIL` remark to indicate the result of each test. If a test fails, a Description dialog box automatically appears on the screen to show the error message, the reason for failure, and possible solutions.

On the screen, you will see the number of transmit (Tx Count) and receive packets (Rx Count) over a transmission period (Time). In addition, the program automatically calculates the Card's performance in bytes per second (BPS).

Available Diagnostic Tests

You need not start any network operating system to run the following tests:

- Configuration Test - Identifies the host PC type
- I/O Test - Checks I/O accessibility
- ID Test - Verifies if the Card's ID is correct
- RAM Test (or Memory Test) - Checks the condition of on-board RAM
- Internal Loopback Test - Checks the adapter's controller
- External Loopback Test - Checks the adapter's network link
- Interrupt Test - Checks interrupt generation
- Network Function Test - Checks the adapter's ability to receive and transmit network packets

Setting the Software Configuration

Select the appropriate Network Operating System, Driver, Frame Type, and Memory Management Options as described below; and then name the directory in which the drivers are stored. You can point and click with the mouse or use the keyboard to make selections.

Then run the `Install Software` command from the Action Menu to install the network environment that you've selected. For NetWare users, a batch file (i.e., STARTNET.BAT) for loading of the NetWare driver from DOS during start-up operations is automatically created. Simply execute this batch file to automatically load and run the NetWare driver.

Selecting the Network OS

The version of 1Step that comes with this package supports installation for various NetWare and NDIS drivers. Instructions for installing other drivers, including packet drivers and UNIX drivers are in README.TXT files.

Press <F1> to activate on-line help and select the driver you need. The corresponding README.TXT file containing driver installation instructions will be displayed.

The following are the Network Operating Systems supported by Accton's 1Step:

NetWare Workstation version 4.0, 3.x, 2.x, Lite, and Lite Server
LAN Manager 2.0 and 2.1
LAN Support Program 1.2 and 1.3
DEC Pathworks
Banyan Vines
Sun PC-NFS
Wollongong Pathway Access
Windows for Workgroups 3.10 and 3.11

Note: 1Step automatically loads the NETX.EXE NetWare Shell program by default. You need to save at least one drive letter for the login directory when the NetWare client is initiated by setting the `Lastdrive` statement in your CONFIG.SYS file to any available drive letter except Z. This will cause the NetWare Client software to assign the next letter as the Client login directory.

e.g., Lastdrive=Y   Lastdrive statement in CONFIG.SYS
       Z:\>Login   NetWare Client login directory assigned

If you opted for the NetWare DOS requester (VLM.EXE), You need not worry about the "LASTDRIVE=" statement. If you set the "LASTDRIVE=" to any letter other than Z, you may get warning messages. Ignore them.

Selecting the Driver

The PC Card provides support for NetWare and NDIS drivers. Install the driver you need depending on your NOS.

Selecting the Frame Type

Select the `Frame Type` appropriate for your adapter from the choices provided. The Card provides four selections, which include Ethernet 802.3, Ethernet II, Ethernet 802.2 and Ethernet SNAP. The factory default frame type is Ethernet 802.3 for NetWare 3.x and Ethernet 802.2 for NetWare 4.0.

Selecting Memory Management Options

The host PC may be using Memory Management software. There are four selections available, namely, `Normal`, `Use XMSNETx`, `Use EMSNETx`, and `DOS5+LOADHIGH`. The default setting is `Normal`. Move your cursor to the field named `Options` to change the settings, if necessary.

Identifying the Driver's Directory Location

Type the directory path in the box labeled `Directory` to indicate where the NetWare drivers are located. When you select `Install Software` from the `Action Menu`, 1Step searches this path to find the files it needs.

Installing the Software Driver

Select the `Install Software` command from the `Action Menu` to change the adapter's software configuration. This command installs the software driver files in your computer. A dialog box indicating the progress of the operation automatically appears on the screen. Click <OK> or press <Enter> to proceed and return to the 1Step main screen.

Menu Bar Commands

The menu bar, located right below the title bar, contains the `File`, `Action` and `Help` menus. Each of these menus is described below. Selecting any of these three menus opens a pull-down menu containing a list of commands. Use the mouse or keyboard to make a selection. Then follow screen instructions to complete the operation.

The File Menu

Opening the `File Menu` displays a list of commands for opening an existing configuration file (*.1st), saving/printing the file, and exiting the `File Menu`.

Table 3.1   File Menu Commands

File Menu Commands	Action
DOS Shell	Opens a DOS shell within 1Step
Exit	Exits 1Step and returns to DOS

The *.1st file contains the card's software configuration for the network environment. You can create different card configuration files and save them in separate *.1st files. If necessary, You can easily open and use any *.1st file, or simply print it for reference.

The Action Menu

Opening the Action Menu displays a list of commands to install software drivers, run diagnostics to test the adapter installation, and update the drivers.

Table 3.2   Action Menu Commands

Action Menu Commands	Action
Install Software	Creates a batch file for running the selected NetWare driver
Test Adapter	Runs diagnostics to test adapter installation

The Help Menu

Opening the Help Menu displays the About and Help commands. The About command provides copyright information about 1Step. The Help command provides on-line assistance to understand the functions available in 1Step.

Chapter 4
Modem/Fax Setup

When plugging your PC card into a phone line, make sure you use an analog line. Lines used by standard household telephones, Fax machines or other modems are analog phone lines. Do not use a digital line. The PABX (Public Branch Exchange) or digital phone lines carry high voltage and current which can damage your modem. The modem function can be activated by the computer's Super Client driver when the PC Card is inserted, or can be activated by the Client Driver program supplied with the PC Card.

Please refer to the Comunication Utility User's Guide for detailed instructions on configuring your modem software. If you are using other third-party software, then please refer to the appropriate manual.

A few basic modem concepts are listed below for your reference.

• COM Ports

  The COM port handles traffic between the modem and your PC. The PC card can be assigned to any COM port.

  COM ports are also used by pointing-devices such as mice, joysticks and track-balls. You must select an available COM port and IRQ number. Consult your PC user's manual for more information on how to determine which COM ports and IRQs are available.

• Modem Speed

  Modem speed (speed at which data travels) is measured in bits per second (bps). Modem speed can range from 300 bps to 33,600 bps.

  When two modems set up a communication link, they go through the process of identifying each other and determining common rules by which they can communicate. This action is called "handshaking." For modems using higher data transfer rates to communicate with those running at a slower rates, they must slow down their own transfer rate to match that of the slower modems.

- Selecting a Mode (Modem Choice)

  To determine your modem's model, check the modem equipment itself, and the documentation that comes with it. If the model number does not appear anywhere in these above-mentioned locations or on the software list, use the `14400/28800/33600 Generic Modem Compatibles` from the Modem software installation options.

- Parity

  Parity types and values must be the same on both the modems when transmitting and receiving. Not many systems use parity, so it is usually set to NONE when specified in software

- Word Length

  The number of bits in each character your PC sends at one time. The default is 8, and the range of permissible values depends on modem speed:

  14,400 kbps: 5 to 8 bits
  28,800 kbps: 7 to 8 bits
  33,600 kbps: 7 to 8 bits

- Stop Bits

  Each character transmitted is terminated by a stop bit. The default is 8, and the range of permissible values depends on modem speed:

  14,400 kbps: 1, 1.5, or 2 stop bits
  28,800 kbps: 1 or 2 stop bits
  33,600 kbps: 1 or 2 stop bits

- Flow Control

  Flow Control denotes the ability to start and stop data transmission. Two available methods of Flow Control are: XON/XOFF and RTS/CTS.

  XON/XOFF interprets characters embedded in the data stream that indicate when data flow should be started or stopped.

  RTS/CTS is a hardware based feature. It determines when to start or stop data flow. One device issues a "request to send" to the other, and the second device answers with a "clear to send."

- Error Correction

  Accton's Modem PC card utilizes the highly reliable Microcom Network Protocol (MNP) and V.42 correction method. These are industry standards which ensure an accurate modem connection and more stringent data security.

- Data Compression

  This feature improves modem data transfer. Accton's PC card comes with both V.42bis and MNP-5 data compression protocols.

  V.42bis can boost the modem data transfer rate to 4 times and MNP-5 can increase it to triple the rate it would take without using this feature.

- Error Correction and Data Compression Initialization Strings

  Listed in Table C.1 are AT command strings that include error correction and data compression. These can be entered from the command line in terminal mode.

Chapter 5
Fax Operations

This chapter describes some of the more common features of Fax software (each of which applies to the Delrina 4-in-1 Fax software). Unless you plan on using the Windows 95 Fax Utility, Fax software needs to be installed before you can transmit or receive a fax. Please refer to the Delrina 4-in-1 User's Guide for detailed instructions on configuring your Fax software. If you are using other 3rd party software, then refer to the appropriate manual.

Transmitting Faxes

- For some software packages, starting the Fax software will automatically load the Fax driver and prepare the modem for transmission.
- Some fax drivers are Terminate and Stay Resident (TSR) programs which operate in the background.
- Fax software usually supports dialing directories to facilitate dialing. Very often they provide phone books for storing numbers of frequently addressed Fax machines.
- Fax numbers are entered exactly the way you would if you were dialing from a regular telephone.

Receiving Faxes

- For some software packages, starting the Fax software will automatically load the Fax driver and prepare the modem to receive Faxes.
- For some software packages, starting the Fax software will automatically load the Fax driver and prepare the modem for transmission.
- Fax packages may be loaded and run as a background application.

Sending and Receiving Logs

Fax software logs both incoming and outgoing Faxes. This log allows you to examine all the details of a Fax, e.g., Recipient, Fax transmission and receive status (i.e., whether a Fax was received/sent successfully).

Appendix A
Troubleshooting

Ethernet Network Interface

1Step includes a diagnostics program for checking the card's components and network cabling. Run diagnostics from 1Step by selecting `Test Adapter` from the `Action Menu`. The card may fail some tests due to various reasons — some of which can be easily remedied by the user. This section provides tips to isolate and solve common problems.

If the problems remain unsolved, contact your dealer or Accton Technology Corporation's Technical Support Section. Write a problem description, including what problems occurred, what PC was used, duration of the problems, the product number, serial number, hardware, software and OS version that you're using.

You may run the MSD (Microsoft Diagnostics) program, which is available from DOS 6.0 or Windows V3.1. Then select `Report ALL` and send this report to Accton by Fax. In your report, also indicate your:

a. Network Operating System and version number
b. Software driver type and version number
c. Make and brand of computer

Refer to the Product Support Services section in Appendix D for contact information.

Symptoms

1. Twisted-pair connection results in card failure.
2. Running Test Adapter results to External Loopback Test failure.

Possible Cause

Invalid twisted-pair link

Suggestions

1. Check the RJ-45 connection for loose cabling.
2. Check for wrong RJ-45 pin assignments.

Symptom

Ethernet PC Card failure; suddenly cannot log into the network.

Possible Causes

1. Bad cable connection
2. Ethernet PC Card not properly installed in PCMCIA slot
3. Host PC's slot defective
4. Resource conflict

Suggestions

1. If you're using the RJ-45 port on the card, check cabling for loose connection or wrong pin assignment .
2. Check if the Card is properly inserted in the PCMCIA slot; it may have been accidentally loosened.
3. Install the PC Card in another PC, or install it in another slot. If the problem is eliminated, then the original PC's slot is defective. Contact your PC vendor for assistance.
4. Check if there is a resource conflict in your CONFIG.SYS file, I/O address or IRQ settings.

Symptom

Cannot run mouse while running 1Step.

Possible Cause

IRQ conflict

Suggestions

1. Change the IRQ setting of the Card.
2. Run mouse driver.

Symptom

Card failure after configuration.

Possible Cause

1. Configuration conflict
2. The card is not enabled

Suggestions

1. Check I/O and IRQ for possible setting conflicts. Make sure they don't conflict with other devices.
2. Check your Card and Socket Services Software to see if the resources are available. Please refer to your Card and Socket Services user's guide for detailed information.

Modem

This section lists some of more common symptoms encountered and possible solutions during modem and software setup.

Table A.1   Common Modem Problems and Possible Solutions

Symptoms	Possible Solutions
No sound from modem or speaker	– Check if the computer's speaker is working – Use the ATL2M1&W command in terminal mode
'Error' message displayed	– Check if you specified the correct modem in your software setup – Make sure you typed in a valid command
Modem dialing not working correctly	– Make sure you dialed the right number – Be sure you dialed "1" first when dialing long distance – Make sure you dialed the prefix first before your number – The number you dialed is engaged or not answering – Your modem may not recognize the dial tone when placing an international call
Modem not responding	– Check your PC's BIOS setup; it may require settings for your modem – Check if you selected the correct COM port in your software setup – Check if the PC and modem connections are all secured
Modem will not dial	– Check all phone line and cable connections – Make sure the line is not being used by another extension – Make sure you are using a standard analog phone line – Switch to another line if the dial tone doesn't sound right
Fax not working	– Check if you have selected the correct Fax class – Check if you have another communications program open – Check if you have selected the correct printer for your application
Modem connection doesn't fit	– Check the orientation of connections for the PC, PC card, adapter cable, and Media Module – Make sure you have the correct end of the cable in the right slot

(continued)

Table A.1   Common Modem Problems and Possible Solutions(cont.)

Symptoms	Possible Solutions
Modem won't connect	– Make sure the parity, modem speed, word length, and stop bits are all properly set per your software's specifications – Try removing all the error correction and data compression – If all is well when communicating with any modem except one particular line, there may be a problem with the modem on the other end
Modem communication error or modem not found	– Make sure the correct modem drivers are loaded – Make sure the modem is properly installed – Check your PC's BIOS setup; it may require settings for the modem – Check if you have selected the correct COM port in your software setup – Check if the PC and modem connections are all secured
NO DIAL TONE message	– Check all phone line and cable connections – Make sure the phone line is not being used – Make sure you are using a standard analog phone line – Check if the phone line is okay by connecting a regular phone and listening for a normal dial tone
DIGITAL LINE ERROR message	– The modem is connected to a digital phone system or a PBX (Public Branch Exchange). Change connection to a standard analog phone line
Modem clicks incessantly; fails to connect	– The modem is connected to a digital phone system or a PBX (Public Branch Exchange). Change connection to a standard analog phone line – A DIGITAL LINE ERROR message is normally displayed, but if the current is under 100mA, the modem will click repeatedly but there will be no response

Appendix B
Modem AT Commands and S-Registers

The AT command set allows you to control your modem from a command line or from terminal mode. Some guidelines for using the AT command set are listed in the following tables.

- AT commands are usually preceded by AT. They are not case sensitive and do not require spaces in the command strings themselves.

- AT commands can be invoked from any modem communications software under terminal mode.

- AT commands invoked normally get a response of OK, ERROR or other messages, depending on the command. These are sometimes called "result codes".

- A Y in the Default column indicates that the command is preset at the factory. You can set the defaults by entering AT&F.

- An N appearing in the command string indicates that a number needs to replace it.

- AT commands can be invoked from any communications software under terminal mode.

Table B.1   AT Command Summary

Command	Description	Usage	Default
A/	Re-execute last command	Allows last successful command entered to be re-executed	N
ATA	Respond to call	Allows manual response when call is received from another modem. The S0=1 command sets the modem to answer automatically.	N
ATB0	Select V.22 at 1200 bps	Select V.22 connection at 1200 bps	Y
ATB1	Bell 212A at 1200bps	Select Bell 212A connection at 1200 bps	N
ATC1	Response message	Return OK message	N
ATD	Dial Command	Get the modem to dial	N
ATDn	Dial modifier	Dial modifier	N
ATE0	Local Echo Off	Do not display the characters you type	N
ATE1	Local Echo On	Display the characters when you type	Y

Table B.1   AT Command Summary

Command	Description	Usage	Default
ATF0	Auto-detect mode	Select auto-detect mode (equivalent to N1)	Y
ATH	Initiate Hangup Sequence	Break up connection between two modems. This command should be used only if a normal disconnect can't occur.	Y
ATH1	Pick Up the Phone Line	Getting the phone off the hook	N
ATI0	Report Product code	Report Product code	Y
ATM0	Speaker off	Turns the speaker off	N
ATM1	Speaker on during Handshake until Connect, and off during Receive	Turns the speaker on until a connection is established, then turns it off during transmission.	Y
ATM2	Speaker always on	Leaves the speaker on during connection and transmission.	N
ATM3	Speaker off during dialing/receiving, and on during answering	Turns the speaker off during dialing & receiving carrier and turn it on during answering	N
ATN0	Automode detection off	Turns off automode detection	N
ATN1	Automode detection on	Turns on automode detection	Y
ATO0	Go on-line	Go on-line	Y
ATO1	Go on-line & retrain sequence	Go on-line and initiate retrain sequence	N
ATP	Force Pulse dialing	Force Pulse dialing	N
ATQ0	Allow result codes to DTE	Allow result codes to DTE	Y
ATQ1	Inhibit result codes to DTE	Inhibit result codes to DTE	N
ATSn	S-Register as default	Select S-Register as default	N
ATSn?	Set value of S-Register to n	Return the value of S-Register n	N
ATSn=v	Set default S-Register	Set default S-Register to value v	N
AT?	Reset S-Register	Return the value of default S-Register	N
ATT	DTMF dialing	Force DTMF dialing	N
ATV0	Report Numeric Commands - Short Form or Terse	Report result codes in numeric or short form	N
ATV1	Report Verbose Commands - Long Form	Report result codes in verbose or word form.	Y

Table B.1   AT Command Summary (cont.)

Command	Description	Usage	Default
ATX0	Basic call progress result codes report	Report basic call progress result codes, i.e., OK, CONNECT, RING, NO CARRIER (also, for busy, if enabled, and dial tone not detected), NO ANSWER and ERROR.	N
ATX1	Basic call progress result codes and connection speeds report	Report basic call progress result codes and connection speeds, i.e., OK, CONNECT, RING, NO CARRIER (also, for busy, if enabled, and dial tone not detected), NO ANSWER, CONNECT XXXX, and ERROR.	N
ATX2	Basic call progress result codes and connection speeds report	Report basic call progress result codes & connection speeds, i.e., OK, CONNECT, RING, NO CARRIER (also, for busy, if enabled, and dial tone not detected), NO ANSWER, CONNECT XXXX, and ERROR.	N
ATX3	Basic call progress result codes and connection rate	Report basic call progress result codes & connection rate, i.e., OK, CONNECT, RING, NO CARRIER, NO ANSWER, CONNECT XXXX, and ERROR.	N
ATX4	Basic call progress result codes and connection rate	Report basic call progress result codes & connection speeds, i.e., OK, CONNECT, RING, NO CARRIER (also, for busy, if enabled, and dial tone not detected), NO ANSWER, CONNECT XXXX, BUSY, NO DIAL TONE, and ERROR.	Y
ATY0	Disable long space disconnect before on-hook	Disable Long space disconnect before on-hook	Y
ATY1	Enable long space disconnect before on-hook	Disable Long space disconnect before on-hook	N
ATZ0	Restore Stored Profile 0	The modem has two profiles where settings are stored. Type an ampersand (&)W at the end of a command to store settings in profile 0. Designates profile 0 as the active profile	Y
ATZ1	Restore Stored Profile 1	Designates profile 1 as the active profile	N

Table B.1   AT Command Summary (cont.)

Command	Description	Usage	Default
AT&C0	Force RLSD active	Force RLSD active regardless of the carrier status	N
AT&C1	Allow RLSD to follow the carrier state	Normally used in reset and initialization strings	Y
AT&D0	Interpret DTR On-to-Off transition per &Qn	Prepares the modem for normal data transfer	N
AT&D1	Interpret DTR On-to-Off transition per &Qn	Prepares the modem for normal data transfer	N
AT&D2	Data Terminal Ready (selected)	Prepares the modem for normal data transfer	Y
AT&D3	Interpret DTR On-to-Off transition per &Qn	Prepares the modem for normal data transfer	Y
AT&F0	Reset to default settings	Restore factory configuration 0.	N
AT&F1	Reset to default settings	Restore factory configuration 1.	N
AT&Go	Disable guard tone	Disable guard tone	N
AT&G1	Disable guard tone	Disable guard tone	N
AT&G2	Enable 1800 Hz guard tone	Enable 1800 Hz guard tone	N
AT&P0	Set 10 pps pulse dial	Set 10 pps pulse dial with 39%/61% make/break	Y
AT&P1	Set 10 pps pulse dial	Set 10 pps pulse dial with 33%/67% make/break	N
AT&S0	DSR is always active	Activates DSR	Y
AT&S1	DSR acts per V.25	DSR acts per V.25	N
AT&T0	Terminate test	Terminate any test in progress	Y
AT&T1	Initiate analog loopback	Initiate local analog loopback	N
AT&T2	Result code	Returns ERROR result code	N
AT&T3	Initiate digital loopback	Initiate local digital loopback	N
AT&T4	Allow digital loopback	Allow remote digital loopback	N
AT&T5	Disallow loopback request	Disallow remote digital loopback request	N
AT&T6	Request an RDL	Request RDL without self-test	N
AT&T7	Request an RDL	Request RDL with self-test	N
AT&T8	Initiate analog loopback	Initiate local analog loop with self-test	N
AT&V	Display configuration	Display current configuration	N

Table B.1   AT Command Summary (cont.)

Command	Description	Usage	Default
AT&W	Write to Stored Profile 0	Write a command to the modem's memory (stored profile 0). Usually added to the end of a string of AT commands¨example: ATL3&W causes L# to be written to stored profile 0.	N
AT&W1	Write to Stored Profile 1	Write a command to stored profile 1	N
AT%E0	Disable line monitor/auto retrain	Disable line quality monitor and auto retrain	N
AT%E1	Enable line monitor/auto retrain	Enable line quality monitor and auto retrain	Y
AT%E2	Enable line monitor	Enable line quality monitor and fallback/fall forward	N
AT%Q	Report line signal quality	Report line signal quality	N
AT\Kn	Controls break handling	Controls break handling during three states	N
AT\N0	Buffer mode	Select normal speed buffered mode	N
AT+FCLASS=n	Service class	Service class	N
AT+FAE=n	Data/Fax auto answer	Data/Fax auto answer	N
AT+FRH=n	Receive data with HDLC framing	Receive data with HDLC framing	N
AT+FRM=n	Receive data	Receive data	N
AT+FRS=n	Receive silence	Receive silence	N
AT+FTH=n	Transmit data with HDLC framing	Transmit data with HDLC framing	N
AT+FTM=n	Transmit data	Transmit data	N
AT+FTS=n	Stop transmission and wait	Stop transmission and wait	N

S-registers are 8-bit status registers where modems store most of their configuration information. You can use the AT commands to modify the features of the modem's operation by writing directly into these registers. The following is a summary of your modem's S-Registers:

Table B.2   S-Register Summary

Registry	Description	Range	Unit
S0	Rings to auto answer	0 - 255	ring
S1	Ring counter	0 - 255	ring
S2	Escape code character	0 - 127	ASCII
S3	Return character	0 - 127	ASCII
S4	Line feed character	0 - 127	ASCII
S5	Backspace character	0 - 127	ASCII
S6	Wait time for dial tone	2 - 255	sec
S7	Abort timer	1 - 255	sec
S8	Pause time of dial delay	0 - 255	sec
S9	Carrieir detect response time	1 - 255	sec
S10	Carrier loss disconnect delay timer	1 - 255	sec
S11	DTMF tone duration	1 - 255	sec
S12	Escape code guard time	0 - 255	sec
S24	Sleep inactivity timer	0 - 255	sec
S25	Delay to DTR off	0 - 255	0.01 sec
S26	RTS to CTS delay	0 - 255	0.01 sec
S29	Flash dial modifier time	0 - 255	0.01 sec
S30	Inactivity timer	0 - 255	10 sec
S32	XON character	0 - 127	ASCII
S33	XOFF character	0 - 127	ASCII
S37	Line connection speed		
S38	Delay before forced hangup	0 - 255	sec

Appendix C
Specifications

System Configuration

Ethernet

Standards Conformance	:	IEEE 802.3 Standard, PCMCIA Release 2.1 Type II, JEIDA 4.1
Bus-Width	:	16-bit
RAM Buffer	:	32KB
I/O Base Address	:	300h, 320h, 340h and 360h
Interrupt	:	2(9), 3, 4, 5, 10, 11, 12, 15

Drivers

NetWareODIDrivers

Novell NetWare, NetWare LAN WorkPlace TCP/IP, Novell LAN Analyzer for NetWare

Packet Drivers

FTP PC/TCP, NCSA TCP/IP, Accton LANSoft

NDIS Drivers

Microsoft LAN Manager, Windows NT, Windows 95, Windows for Workgroups, IBM LAN Server 2.x, IBM LAN Support, IBM OS/2 EE V2.0, DEC Pathworks, SUN PC-NFS, Banyan VINES, IBM TCP/IP for DOS & OS/2, Wollongong Pathway Access

Compatibility List

This device has been tested to work with the following machines:

Acer, Arch, Aries, Arima, AST, Chaplet, Chicony, Compal, Crete, Compaq, DEC, FIC, IBM, Inventec, DELL, Gateway 2000, HP, NEC, NCR, NoteStar, Sunrex, Toshiba, Twin Head, and Zenith.

Modem

Standards Conformance		
Data	:	V.34, V.32bis, V.32, V.22bis, V.22A/B, V.23, V.21, Bell 212 A/B, Bell 103
Fax	:	V.17, V.29, V.27ter, V.21 channel 2, G3
Error Correction	:	V.42, MNP
Data Compression	:	V.42bis, MNP
COM Port Supported	:	COM2, COM3, COM4
Asynchronous Character Format	:	up to 10 bits
Receive Sensitivity	:	-9 dbm to -43 dbm
Dialing	:	Tone and Pulse
Pulse Dialing Rate	:	10 pulses per second
Buffer Memory	:	32 KB
ROM	:	128 KB

Operating Environment

Power Requirements	:	150 mA (Typical) & 170 mA (Max.) when both LAN and Modem operate concurrently
Temperature	:	0°C to 55°C (Standard Operating)
Humidity	:	10% to 90% (Noncondensing)

Hardware Certification

Certification		
Emissions	:	FCC Class B, VCCI Class 2, CISPR Class B

Appendix D
Regulatory Standards Conformance

EMI Warning

FCC Part 15 Class B Certification

Accton Technology Corporation
Model Numbers: *EN2218*
FCC ID: *HEDEN2218*
This device complies with Part 15 of the FCC Rules. Operation is subject to the following conditions:

1. This device may not cause harmful interference, and

2. This device must accept any interference received, including interference that may cause undesired operation.

Warning!   This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

•   Reorient or relocate the receiving antenna.

•   Increase the distance between the equipment and receiver.

•   Connect the equipment into an outlet on a circuit different from the one which the receiver is connected to.

•   Consult the dealer or an experienced radio/TV technician for help.

You are hereby cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.

The user may find the following booklet prepared by the Federal Communications Commission helpful:

The Interference Handbook

This booklet is available from the U.S. Government Printing Office. Washington, D.C. 20402. Stock No. 004-000-00345-4.

Note: In order to maintain compliance with the limits of a Class B digital device, Accton requires that you use a quality interface cable when connecting to this device. Changes or modifications not expressly approved by Accton could void the user's authority to operate this equipment. Suggested cable types are:

• Twisted-pair for RJ-45 connections: 10BASE-T

• Twisted-pair for RJ-11 connections: Modem/Fax

Warning: Wear an anti-static wrist strap or take other suitable measures to prevent electrostatic discharge whenever handling this equipment.

Regulatory Conformance Declaration

VCCI Class 2 Compliance

電波障害自主規制について

　この装置は、第二種情報装置　（住宅地域又はその隣接した地域において使用されるべき情報装置）で、住宅地域での電波障害防止を目的とした情報処理装置等、電波障害自主規制協議会（VCCI）基準に適合しております。
　しかし、本装置をラジオ、テレビジョン受信機に近接してご使用になると、受信障害の原因となることがあります。
　取扱説明書に従って正しい取り扱いをして下さい。

Part 68

This equipment complies with Part 68 of the FCC rules. This equipment comes with a label attached to it that contains, among other information, the FCC registration number and ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company.

This equipment uses the following USOC jacks: RJ11C

The REN is used to determine the quantity of devices that may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to the line, as determined by the total RENs, contact the telephone company to determine the maximum REN for the calling area.

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advance notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations, or procedures that will provide advance notice in order for you to make the necessary modifications in order to maintain uninterrupted service.

If trouble is experienced with this equipment, please contact Accton Technology Corporation at (408)452-8400 for repair and warranty information. If the trouble is causing harm to the telephone network, the telephone company may request you to remove the equipment from the network until the problem is resolved.

No repairs may be done by the customer.

This equipment cannot be used on telephone company-provided coin service. Connection to Party Line Service is subject to state tariffs.

When programming and/or making test calls to emergency numbers:

- Remain on the line and briefly explain to the dispatcher the reason for the call.
- Perform such activities in the off-peak hours such as early morning or late evenings.

The Telephone Consumer Protection Act of 1991 makes it unlawful for any person to use a computer or other electronic device to send any message via a telephone facsimile machine unless such message clearly contains, in a margin at the top or bottom of each transmitted page or on the first page of the transmission the date and time it is sent and an identification of the business, other entity, or individual sending the message and the telephone number of the sending machine or such business, other entity, or individual.

In order to program this information into your facsimile, refer to your communications software user manual.

Appendix E
Product Support Services

Product Registration

Fill in the Owner Registration Card and mail it to Accton Technology Corporation. Accton will keep your record and inform you of any new Accton product developments.

Problem Report

If problems occur during product operation, please check the adapter configuration settings, cables, connectors, network terminators, hardware compatibility and other network components.

Write a description of the problem, including what problems occurred, when they occurred, duration of the problems, the product number, serial number, hardware, software and the DOS version that you are using. Then contact your dealer or Accton Technology Corporation for assistance.

Hardware Repair Service

You must get an RMA (Return Materials Authorization) number before returning any hardware for repair. To obtain this number please inform Accton of your company name, address, product name and model number, contact person, telephone number, and a problem description list. If your unit is under repair warranty you must also give your purchase date.

Carefully pack your hardware. If possible, use the original carton. Mark the RMA number on the carton and send it to your dealer. After repair, Accton will inform you of the date of delivery and the exact amount due. Please send the payment by T/T (Telegram Transfer), and Accton will send you the fixed component after receiving payment. With or without warranty, if the hardware is found to be free of defect, you will only be charged for testing and handling cost.

Software Update and Upgrade Service

Accton constantly improves its software products by adding enhancements and new features. Minor software updates are free of charge. If greater changes have been made to the software, Accton offers software upgrade services at a specially reduced price.

Bulletin Board Service (BBS)

- In countries other than the U.S., call 886-3-5770-654 to reach Accton Taiwan's modem line. Modems with 14400 through 2400 baud are supported. Choose 8 data bits, 1 stop bit and no parity. Standard VT100 terminal emulation is supported

- In the United States, call 408-452-8828 to reach the Accton USA's modem line. Modems with 14400 through 2400 baud are supported. Choose 8 data bits, 1 stop bit and no parity. Standard VT100 terminal emulation is supported

Interactive Fast Fax (U.S.A. office)

Printed technical documentation can be Fax'ed to your Fax machine, 24-hours a day.

- Call 408-452-8811 to reach Accton's interactive Fast Fax service. You will need a Touch-Tone phone and a Fax machine (or equivalent). Choose document 911 for a listing of technical bulletins

Technical Support

Your dealer or installer is the person who understands your network and Accton products. If neither is available to help you, Accton technical support engineers are available by Fax, mail or phone.

- Send your technical questions by Fax to:

  Accton Taiwan: 886-3-5770-267

  Accton USA: 408-452-8988

- To obtain software upgrades connect via ftp to ftp.accton.com.tw

- Send your technical questions by email to support@accton.com.tw

- Mail your technical questions to:

  For all countries except North America

  Accton Technology Corporation
  Attn: Technical Support
  No. 1 Creation Road III
  Science-based Industrial Park
  Hsinchu 300, Taiwan, R.O.C.

  For North America

  Accton USA
  Attn: Technical Support
  1962 Zanker Road,
  San Jose, CA 95112, U.S.A.

- During local business hours, call:

Accton Taiwan	Monday-Friday 8 am to 6 pm	886-3-5770-270
Accton USA	Monday - Friday 7 am to 5 pm Pacific Time	408-452-8900 or 800-926-9288

Limited Five Year Warranty

Limited Warranty

Accton warrants to the original owner that the product delivered in this package will be free from defects in material and workmanship for the five (5) years following the latter of: (a) the date of purchase only if you register by returning the registration card as indicated thereon with proof of purchase; or (b) the date of manufacture. This warranty does not cover the product if it is damaged in the process of being installed. Accton recommends that you have the company from whom you purchased this product install it.

THE ABOVE WARRANTY IS IN LIEU OF ANY OTHER WARRANTY, WHETHER EXPRESS, IMPLIED OR STATUTORY, INCLUDING BUT NOT LIMITED TO ANY WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ANY WARRANTY ARISING OUT OF ANY PROPOSAL, SPECIFICATION OR SAMPLE, ACCTON SHALL NOT BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES, ACCTON NEITHER ASSUMES NOR AUTHORIZES ANY PERSON TO ASSUME FOR IT ANY OTHER LIABILITY.

Customer Remedies

If the product is found to be defective within the first year, Accton's entire liability and your exclusive remedy for any breach of warranty, shall be, at its option, will repair or replace the product at no charge except as set forth below, provided that you deliver the product along with a return material authorization (RMA) number either to the company from whom you purchased it or Accton. If the product is found to be defective after one year from the later of date of purchase or date of manufacture, Accton will charge a process and handling fee, provided that you deliver the product along with a return material authorization (RMA) number to the company from whom you purchased it or to Accton. Accton warrants the repaired or replaced product to be free from defects in material and workmanship for a period of the greater of: (a) ninety (90) days from the return shipping date or (b) the period of time remaining on the original five (5) year warranty.

Return Process

Before you may return any Accton product to Accton, you must request an RMA number by calling, Faxing or writing Accton's Service Department at the number provided by Accton. If you ship the product, you must assume the risk of damage or loss in transit. You must use the original container (or the equivalent) and pay the shipping charge. Accton may replace or repair the product with either new or reconditioned product, and the returned product becomes Accton's property.

This warranty does not cover replacement of products damaged by abuse, accident, misuse, neglect, alteration, repair, disaster, improper installation or improper testing.

ACCTON SHALL NOT BE HELD LIABLE FOR ANY LOSS OF PROFITS, LOSS OF USE, LOSS OF DATA, INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES CAUSED BY THE USE OF THIS PRODUCT OR INABILITY TO USE IT, EVEN IF THE COMPANY OR ACCTON HAS BEEN ADVISED OF SUCH LIABILITY OR OTHER SPECIAL CLAIMS. IN NO CASE SHALL ACCTON'S LIABILITY EXCEED THE ACTUAL MONEY PAID FOR THE PRODUCTS AT ISSUE.

If you purchased this product in the USA, be aware that some states do not allow limitations on how long an implied warranty lasts so the above limitations may not apply to use. Some states do not allow limitations on how long an implied warranty lasts so the above limitations may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty give you specific legal rights and you may have other rights which vary from state to state. All parts or components contained in this product are covered by Accton's limited five year warranty for this product; the product may contain fully tested, recycled parts, warranted as if new.

Warranty Information

All territories except North and South America:

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Fax: 81-3-3495-1352

Ordering Information

- Multi-function Ethernet+Modem/Fax PC Card

  EN2218-1   Ethernet + 14.4 Kbps Fax/Modem with Y-cable
  EN2218-3   Ethernet + 28.8 Kbps Fax/Modem with Y-cable
  EN2218-5   Ethernet + 33.6 Kbps Fax/Modem with Y-cable

Glossary

10BASE-T

IEEE's specifications for 10 Mbps Ethernet using twisted-pair cable (100Ω STP or UTP). The maximum length of cable for a point-to-point connection is 100 meters.

1Step

Specialized program used with Accton's Ethernet Adapters for quick adapter software installation and diagnostics.

Driver

Program that enables the network operating system to communicate with LAN cards.

Ethernet

A network communication system developed and standardized by DEC, Intel and Xerox, using baseband transmission, CSMA/CD access, logical bus topology, and coaxial cable. The successor IEEE 802.3 standard provides for integration into the OSI model and extends the physical layer and media with repeaters and implementations that operate on fiber optics, broadband, and twisted-pair.

Frame

A group of bits that include data plus control information. Generally refers to a link layer (layer 2) protocol.

IEEE 802.3 standard

Standard for the physical and electrical connections in local area networks developed by the IEEE (Institute of Electrical and Electronics Engineers).

Interrupt

Signal that causes a momentary switch of control from program to Operating System when input or output is required.

I/O Address

Input/output address; starting address for data input and output.

Loopback

Diagnostic test in which a signal is transmitted across a medium while sending device waits for its return.

Modem

Device that performs modulation and demodulation, allowing data communications to occur in analog form over telephone circuit.

Mbps

Data rate equal to 1,048,576 bits per second.

NetWare

Novell's network operating system, which provides the ability to transparently share services across dissimilar platforms. Uses the NetWare Core Protocol (NCP), Internetwork Packet Exchange (IPX), and Sequential Packet Exchange (SPX) protocols.

RJ-45 Connector

Most common terminator for twisted-pair wiring.

Shielded Twisted-Pair

100Ω Category 5 twisted-pair wire covered with an external aluminum-foil or woven-copper shield designed to reduce excessive noise pick up or radiation. The STP cable refered to in this manual is also sometimes called screened twisted-pair (ScTP). Its impedance is 100Ω and has the same pin assignment as UTP. This cable should not be confused with the older 150Ω cable type designed by IBM.

Unshielded Twisted-Pair

Cable composed of two insulated wires twisted together to reduce electrical interference; used in common telephone cord.

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